

Write the formula for the following ionic compounds: (see next page for key)

sodium bicarbonate _____

sodium fluoride _____

iron (III) chloride _____

sodium carbonate _____

copper (II) sulfate _____

magnesium hydroxide _____

barium nitrate _____

lithium sulfate _____

magnesium chloride _____

silver nitrate _____

aluminum sulfate _____

calcium hydroxide _____

calcium sulfate _____

mercury (II) nitrate _____

lead (IV) nitrate _____

magnesium iodide _____

sodium nitride _____

Practice Problems KEY

sodium bicarbonate NaHCO_3

sodium fluoride NaF

iron (III) chloride FeCl_3

sodium carbonate Na_2CO_3

copper (II) sulfate CuSO_4

magnesium hydroxide Mg(OH)_2

barium nitrate $\text{Ba(NO}_3)_2$

lithium sulfate Li_2SO_4

magnesium chloride MgCl_2

silver nitrate AgNO_3

aluminum sulfate $\text{Al}_2(\text{SO}_4)_3$

calcium hydroxide Ca(OH)_2

calcium sulfate CaSO_4

mercury (II) nitrate $\text{Hg(NO}_3)_2$

lead (IV) nitrate $\text{Pb(NO}_3)_4$

magnesium iodide MgI_2

sodium nitride Na_3N

Write the formulas for the following covalent compounds:

See next page for KEY

- a. disulfur tetrafluoride _____
- b. carbon trioxide _____
- c. nitrogen pentoxide _____
- d. nitrogen tribromide _____
- e. dinitrogen heptachloride _____
- f. carbon tetrachloride _____
- g. hydrogen monochloride _____
- h. trihydrogen monophosphide _____
- i. dihydrogen monoxide _____

KEY

- a. disulfur tetrafluoride S_2F_4
- b. carbon trioxide CO_3
- c. nitrogen pentoxide NO_5
- d. nitrogen tribromide NBr_3
- e. dinitrogen heptachloride N_2Cl_7
- f. carbon tetrachloride CCl_4
- g. hydrogen monochloride HCl
- h. trihydrogen monophosphide H_3P
- i. dihydrogen monoxide H_2O

Write the names of the following compounds:

See next page for key

NaCl _____

$\text{Fe}_2(\text{CO}_3)_3$ _____

$\text{Cu}(\text{OH})_2$ _____

$(\text{NH}_4)_2\text{SO}_4$ _____

LiNO_3 _____

BaSO_4 _____

$\text{Mg}(\text{NO}_3)_2$ _____

AgCl _____

$\text{Al}(\text{OH})_3$ _____

CaSO_4 _____

FeS _____

PbCl_2 _____

NaI _____

MgCO_3 _____

KEY

NaCl sodium chloride

$\text{Fe}_2(\text{CO}_3)_3$ iron(III) carbonate

$\text{Cu}(\text{OH})_2$ copper(II) hydroxide

$(\text{NH}_4)_2\text{SO}_4$ ammonium sulfate

LiNO_3 lithium nitrate

BaSO_4 barium sulfate

$\text{Mg}(\text{NO}_3)_2$ magnesium nitrate

AgCl silver chloride

- (note: silver is one of the transition metals that only occurs as a (1+) ion)

$\text{Al}(\text{OH})_3$ aluminum hydroxide

CaSO_4 calcium sulfate

FeS Iron(II) sulfide

PbCl_2 lead(II) chloride

NaI sodium iodide

MgCO_3 magnesium carbonate

Example: Write the name for SO_3

1) List the name of the first element in the formula.

sulfur

2) List the second element and add the -ide suffix.

sulfur oxide

3) Use Greek prefixes to indicate the number of each atom in the formula.

_____ **sulfur** _____ **oxide**

sulfur trioxide

- Exception: do not use **mono-** for the *first* element in the name.
 - NOTE, we did not write **monosulfur** because of this rule!
- The *o* or *a* at the end of the Greek pre-fix is usually dropped when the element name begins with a vowel
 - Not applicable in this example

Example: Write the name for CO

1) List the name of the first element in the formula.

carbon

2) List the second element and add the -ide suffix.

carbon oxide

3) Use Greek prefixes to indicate the number of each atom in the formula.

_____ **carbon** _____ **oxide**

carbon monoxide

- Exception: do not use **mono-** for the *first* element in the name.
 - NOTE, we did not write **monocarbon** because of this rule!
- The *o* or *a* at the end of the Greek pre-fix is usually dropped when the element name begins with a vowel
 - NOTE, we did not write **monooxygen** because of this rule!

Write the names of the following compounds:

See next page for key

a. Br_2I_4 _____

b. P_5F_8 _____

c. NO_5 _____

- Remember: The *o* or *a* at the end of the Greek pre-fix is usually dropped when the element name begins with a vowel

d. NBr_3 _____

e. N_2O_5 _____

f. BrCl_3 _____

g. H_2S _____

h. N_2O _____

KEY

- a. Br_2I_4 dibromine tetriodide
- b. P_5F_8 pentaphosphorus octafluoride
- c. NO_5 nitrogen pentoxide
 - The *o* or *a* at the end of the Greek pre-fix is usually dropped when the element name begins with a vowel
 - NOTE, we did not write **pentaoxygen** because of this rule!
- d. NBr_3 nitrogen tribromide
- e. N_2O_5 dinitrogen pentoxide
- f. BrCl_3 bromine trichloride
- g. H_2S dihydrogen monosulfide
- h. N_2O dinitrogen monoxide